

As a result of this amendment, claims 50-77 are now pending in the application.

The several objections to the drawings have been noted and are discussed separately in the following paragraphs.

With respect to the objection relating to the embodiment of Figs. 6-6B, Applicant submits that the specification makes clear that operation of reversible motors 118 and 135 causes longitudinal movement of lens 126b and photodetector 124 in a direction determined by the direction of operation of those motors. Since the output shafts of reversible electric motors undergo rotary motion when the motors are energized, and since the intended purpose of the motors is to provide a driving force to move lens 126b and photodetector 124 longitudinally fore or aft in tube 122, it is obvious that (a) control rods 123 and 129 need to be moved lengthwise in order to effect movement of lens 126b and photodetector 124 longitudinally relative to tube 122, and (b) motion-translating means are required in order to convert the rotary motion of the motor output shafts to linear motion of rods 123 and 129. It is equally obvious to persons skilled in the art that reciprocal linear movement of rods 123 and 129 in response to the rotary driving force of the motors can be achieved in various ways, e.g., by threading portions of the rods so that they can function as screws that are rotatively coupled to lens 126b and photodetector 124 and are mounted so as to move axially when turned, and using a gear mechanism such as a

helical gear mechanism to couple the threaded portions of the rods with motors 118 and 135, whereby operation of the motors will cause the screw-type rods to rotate and hence cause lens 126b and photodetector 124 to move toward or away from the distal end of tube 122. A second alternative approach is to configure portions of the rods to function as gear racks, and then couple motors 118 and 135 to the gear racks by appropriate gear mechanisms.

The schematic representation of components 120 and 133 in Fig. 6 is believed to be appropriate and sufficient, since their functions are clearly identified or rendered obvious in the specification as converting the rotational output of the reversible electric motors 118 and 135 to linear bi-directional motion of control rods 123 and 129 respectively. Therefore, particularly since mechanisms for converting rotational to linear motion are well known in the art and different mechanisms (as pointed out above) can be used to accomplish the intended motion-translating functions, Applicant believes and respectfully submits that Figs. 6, 6A and 6B show sufficient structural detail to enable one skilled in the art to reproduce the embodiment illustrated in those figures, and so no changes should be required to be made to those figures:

In this connection, it should be noted that Applicant has endeavored to clarify matters with regard to the embodiment of Figs. 6-6B by amending the last paragraph on page 27, portions of page 28, and the first paragraph on page 29. Those changes made by Applicant are intended to provide a more precise

description of the construction of the embodiment shown in Figs. 6, 6A and 6B. It is believed that those changes accomplish their intended purpose and do not introduce any new matter. Accordingly Applicant respectfully requests withdrawal of the objection relating to Figs. 6 and 6B.

As for Figs. 3, 3a ,7c and 7d, it is respectfully submitted that the inner and outer tubes are adequately represented in the drawings. They are represented by single rather than double lines to emphasize that their walls are quite thin, in keeping with the desire to minimize the outside diameter of the endoscope tubes. Therefore, it is not believed that correction is required, and reconsideration of this objection is solicited. However, if the objection to these figures is repeated, Applicant will attempt to modify them to overcome the Examiner's specific objections without introducing any new matter.

Further in connection with the drawings, submitted herewith are copies of a proposed new set of formal drawings with additional numerals noted in red ink. The proposed addition of numerals is being made as a consequence of the fact that by this document Applicant has amended the specification by deleting and adding reference numerals in an effort to facilitate comprehension of Applicant's invention. It is respectfully requested that the Examiner approve the proposed addition of numerals and also indicate whether or not the proposed new drawings meet Patent Office standards.

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The objection to dual use of the numeral 63 set forth in paragraph 3 of the Official Action, has been overcome by numerous changes to the specification. Now the numeral 63 identifies only the electrical conductors.

Applicant further requests reconsideration of the objections set forth in paragraph 4 of the Official Action to the effect that the specification fails to provide an adequate written description of the invention. and does not provide support for the claimed invention. The specific objection that the specification fails to disclose the exact manner in which the lens and photodetector are moved along the longitudinal axis of the tube in response to rotation of rods 123 and 129 is not believed to be well-founded. The specification clearly indicates that the rods are connected by motion translating mechanisms for effecting movement of the lens 126b and the photodetector 124 along the longitudinal axis of tube 122. The Examiner's attention is drawn to the embodiment of Figs. 7-7B which clearly includes operative mechanisms for moving lens 126b and photodetector 124.

The objection in the last paragraph on page 3 of the Official Action was well-founded but it no longer applies since the new claims do not call for a control rod coupled to a first lens and a photodetector.

With regard to paragraph 5 of the Official Action, the rejection of claims 25-40 under 35 USC 112, first paragraph, on the basis of the objections to the specification, has been duly considered. Reconsideration of the objections to

the specification is requested in view of the changes made to the specification by this amendment and also by the foregoing remarks.

With regard to paragraph 6 of the Official Action, the objection to claims 42-45 because of informalities has been duly noted but that objection no longer applies since those claims have been canceled.

With regard to paragraph 7 of the Official Action, the rejection of claims 44-49 under 35 USC 112, second paragraph, as being indefinite, no longer applies in view of cancellation of those claims.

Applicant has duly considered the rejection of claims 41-45 under 35 USC 102(b) as being clearly anticipated by Sato et al (U.S. 4,488,039), the rejection of claims 46-48 under 35 USC 103 as being unpatentable over Sato et al in view of Richards (U.S. No. 3,091,235) and the rejection of claim 49 as being unpatentable over Sato et al in view of Richards and further in view of Ohsawa (U.S. No. 4,905,668). Those claims have been canceled in favor of the new, more definitive claims 50-77.

Applicant believes that claims 50-77 patentably distinguish from the instruments disclosed by Sato et al, Richards and Ohsawa. It is believed that these new claims distinguish patentably over those references particularly and primarily because of the limitations that indicate how the zoom lens and the photodetector are moved. The one thing that these prior art references have in common is a failure to show mechanisms that utilize axially movable rods for

moving the zoom lens and the photodetector as required by Applicant's new claims 50-77.

The other references of record have been duly considered, but they are not believed to anticipate or render obvious the invention defined by the claims presently in the application.

In view of the foregoing remarks, Applicant believes that claims 50-77 relate to patentable subject matter. Therefore prompt and favorable reconsideration is solicited.

Respectfully submitted,



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NAME OF ATTORNEY



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April 6, 1995

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